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**A method for fabricating a sandwich panel**

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# COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

## DECLARATION IN SUPPORT OF CONVENTION OR NON-CONVENTION APPLICATION FOR A PATENT

34986/24

Insert title of invention.

In support of the Application made for a patent for an invention  
entitled: "A METHOD FOR FABRICATING A SANDWICH PANEL"

Insert full name(s) and address(es)  
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I, NORM BAKER, Director  
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the applicant for the patent to make this declaration on its behalf.

2. (a) ~~I am~~ the actual inventor of the invention

or (b) ANDREW DRYSDALE THOMSON, of 4 Bicton Road,  
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State manner in which applicant(s)  
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Declared at MORDIALLOC this TWENTY SIXTH day of NOVEMBER 1964

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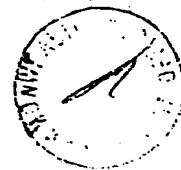
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(11) AU-B-34986/84

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least a partial vacuum thereby compressing the laminate structure between the cover and the bed so as to effect bonding of the skinmembers and core members to form the sandwich panel.



1a

This invention relates generally to methods and apparatus for fabricating sandwich construction panels and to the sandwich panels themselves, and more particularly is concerned with methods and apparatus for the large scale fabrication of construction panels and large size panels. The present invention finds particular application in the construction of transportable and re-locatable buildings such as those used on construction sites by private companies, government authorities, statutory bodies, schools, and the like but, of course is not necessarily limited to these particular limitations.

In present times, timber for building frames is becoming scarce and more costly and also labour costs have risen sharply.

It is an object of this invention to provide a method for the fabrication of large-scale sandwich construction panels.

According to the present invention there is provided a method for the fabrication of a sandwich panel having a plurality of skin members and a plurality of core members arranged such that the join between adjacent ones of at least some of the skin members is

10 constructed of concrete or other suitable material  
for supporting a three component sandwich laminate panel  
blank 17. Instead of a fixed concrete bed, a mobile  
table suitable for smaller scale work can be constructed  
5 in the form of a timber top supported on a steel frame  
having rotatable ground contacting members, such as  
wheels or castors.

The top surface of the bed is provided with a  
profiled rubber mat 11 moulded with a regular pattern of  
10 raised, blank-supporting, flat-topped discs 12 with  
interconnecting passages 13 formed in the troughs  
between the raised discs. A series of spaced outlet  
holes 14 are provided in troughs of the mat along the  
longitudinal centre line thereof and also through the  
15 bed and are connected through a network of suction lines  
to a vacuum pump.

The perimeter of the bed is provided with a flat  
steel frame plate 15 covered with a micro cell rubber  
vacuum-sealing gasket 16. The pre-fab sandwich lay-up  
20 17 comprises a plurality of pre-shaped core blocks 18  
which are preferably moulded from rigid and insulating  
cellular material such as rigid foamed polystyrene; a  
plurality of first (or bottom) facing sheets 19 made of  
any sheet or board material such as for example, sheet  
25 metal, colorbond, aluminium siding; a plurality of  
second (or top) facing sheets 20 of any sheet or board  
material, such as, for example, plywood or the like; one  
or the inner face of both pluralities of said sheets or  
both faces of the plurality of cellular core blocks  
30 having been previously coated with a generally pressure  
dependent adhesive, such as for example an ambient

with the joins between the adjacent ones of the core blocks 18. Even more typically, the joins of one set of sheets 19 are not aligned with the joins between adjacent ones of the second sheets 20. By the staggering or non-alignment of respective corresponding joins it can be seen that at least some of the facings or outer sheets 19, 20 protrude from one side of the panel so as to lap over the core of an adjacent panel.

After positioning, the panel, however formed as described above, onto the bed, a pliable vacuum sealing envelope 20a or sheet of synthetic plastics material such as polyvinyl chloride, chloroprene, neoprene or the like is placed over the composite panel blank and in one embodiment, over the peripheral frame and the peripheral clamping frame is then placed over the frame and clamped into position by removable spring clamps and vacuum applied to bond the frameless sandwich panel components together by atmospheric pressure at ambient temperature. Any suitable clamping means may be used. After bonding the envelope is removed and in the case of large panels [for example with 13.6 metres (44 ft.) long building panels] the suction disc gantry hoist 22 lifts and handles the panel.

The gantry suction disc hoist comprises a segmented or jointed rigid frame of generally elongate hexagon form having a substantially rectangular middle section 23 and end sections 24 and 25 detachable from the middle section by removal of pins 26 from matching brackets 27, 28. The middle section is provided without riggers 29 each with a wheel 30 and a vacuum unit 31 mounted across the middle section operates a series of vacuum discs

any other purpose. The vacuum bed can be inclined or vertical and curing of the adhesive coated sandwich panels can take place in a controlled atmosphere if desired. The invention is applicable to the  
5 simultaneous manufacture of a plurality of panels, from a plurality of blanks.



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method for the fabrication of a sandwich panel having a plurality of skin members and a plurality of core members arranged such that the join between adjacent ones of at least some of the skin members is laterally displaced with respect to the corresponding join between adjacent ones of at least some of the core members comprising the steps of locating a plurality of first skin members onto a bed, applying bonding adhesive to the plurality of core members or to the plurality of first skin members, contacting the plurality of core members and first members together, applying bonding adhesive to the plurality of core members or to the plurality of second skin members and contacting said plurality of core members and said second skin members together so as to form a laminate structure, covering the laminate structure so formed with a pliable cover, sealing the perimeter of the cover to the bed; evacuating air from the envelope formed by sealing the cover to the bed so as to form at least a partial vacuum thereby compressing the laminate structure between the cover and the bed so as to effect bonding of the skin members and core members to form the sandwich panel.

DATED this 28th day of February, 1985

IFCO NOMINEES PTY. LTD.

by its Patent Attorneys

DAVIES & COLLISON



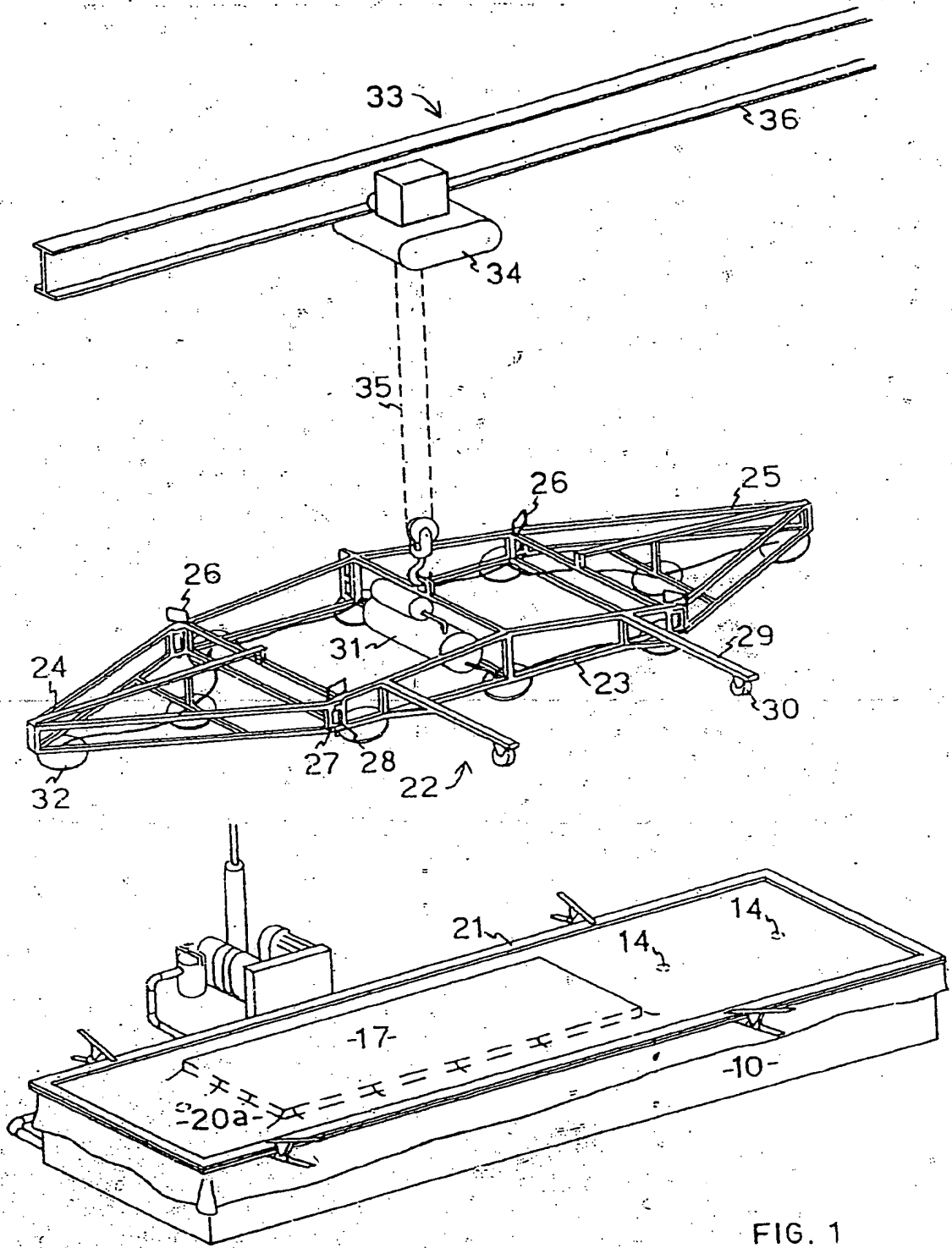
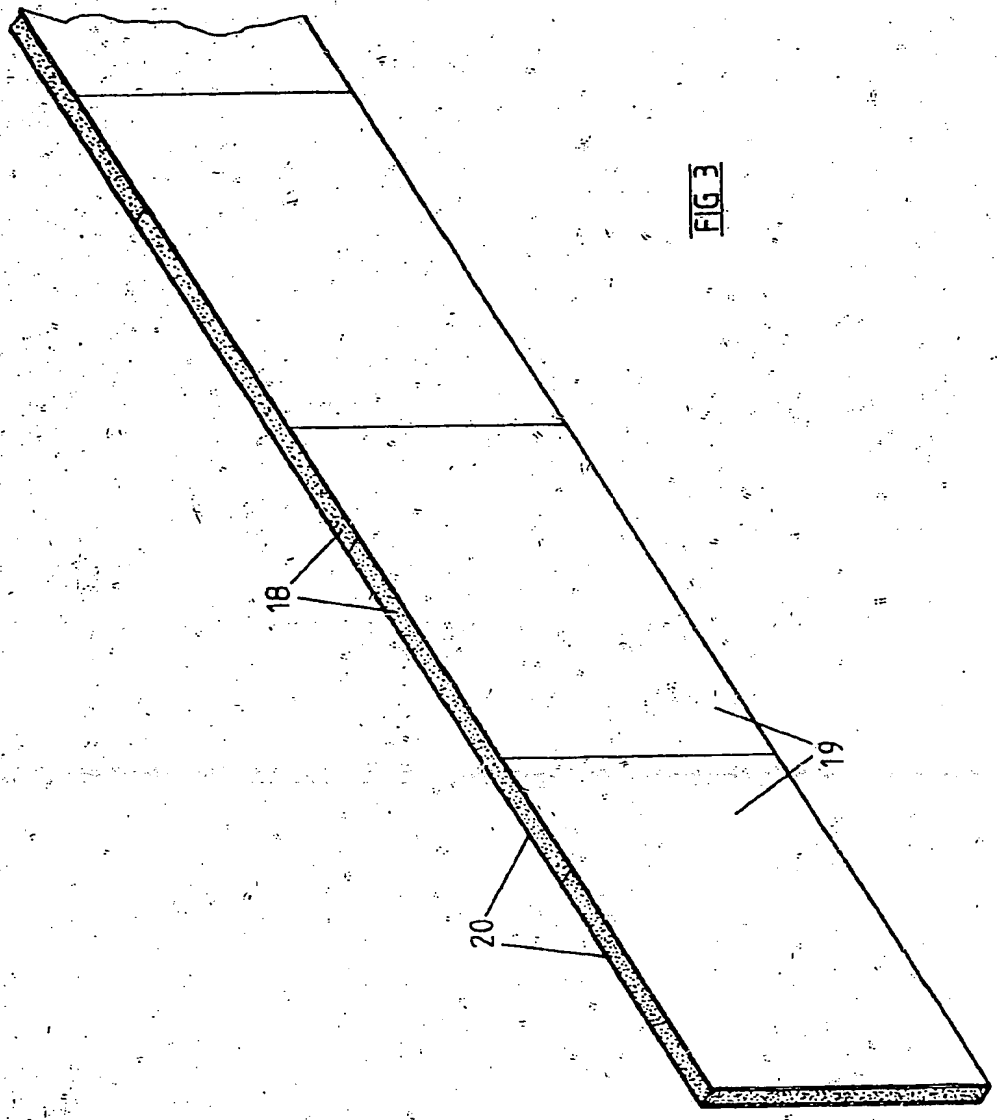


FIG. 1

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**FIG 3**



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